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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 09/925,312  | 08/10/2001  | Jan R. Westra        | 1875.1630000/RES/JTH | 4768             |
| 28393   | 7590        | 10/05/2004           | EXAMINER             |                  |
| STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.<br>1100 NEW YORK AVE., N.W.<br>WASHINGTON, DC 20005 |             |                      | ELAHEE, MD S         |                  |
|   |             |                      | ART UNIT             | PAPER NUMBER     |
|   |             |                      | 2645                 |                  |

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                               |  |
|------------------------------|-------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>09/925,312 | Applicant(s)<br>WESTRA ET AL. |  |
|                              | Examiner<br>Md S Elahee       | Art Unit<br>2645              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/30/02 &amp; 01/09/0</u> . | 6) <input type="checkbox"/> Other: ____.  |

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## **DETAILED ACTION**

### ***Drawings***

1. The informal drawings of fig.1, 2, 3, 6, 8 and 10 are not of sufficient quality to permit examination. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al. (U.S. Patent No. 4,246,582).

Regarding claim 1, Kondo teaches a hybrid coil (i.e., circuit) having a first port (see fig.1, connection between item 18 and item 16) that is connectable to a transmission medium, a second port (see fig.1, connection between item 16 and item 12) that is connectable to a transmit source,

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and a third port (see fig.1, connection between item 16 and item 21) (fig.1; col.2, lines 53-67, col.3, lines 1-20).

Kondo further teaches a high-pass filter, having an input that is directly connected to the third port of the hybrid coil (fig.1; col.3, lines 3-20).

Kondo further teaches an AGC (i.e., gain stage) 24, having an input that is connected to an output of the high-pass filter (fig.1; col.3, lines 3-20).

Regarding claim 2, Kondo teaches that the gain stage is directly connected to the output of the high-pass filter (fig.1; col.3, lines 3-20).

Regarding claim 22, Kondo teaches that the hybrid circuit, the high-pass filter, and the gain stage are inherently passive (fig.1).

Regarding claim 23, Kondo teaches that the third port of the hybrid circuit is substantially isolated from the transmit source, despite variations in an input impedance of the high pass filter (fig.1; col.3, lines 3-20).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582) and in view of Kakuishi et al. (U.S. Patent No. 5,367,540).

Regarding claim 3, Kondo does not specifically teach “a replica circuit that replicates a transmit signal generated from said transmit source to produce a replica transmit signal that substantially cancels said transmit signal at said third port of said hybrid”. Kakuishi teaches an echo-canceler (i.e., replica circuit) that replicates a transmit signal generated from the transmit source to produce a replica transmit signal that substantially cancels the transmit signal at the third port of the hybrid (fig.12; col.10, lines 45-65). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo to incorporate a replica circuit that replicates a transmit signal generated from the transmit source to produce a replica transmit signal that substantially cancels the transmit signal at the third port of the hybrid as taught by Kakuishi. The motivation for the modification is to have doing so in order to remove the loop back component from the transmission signal.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582) and in view of Kakuishi et al. (U.S. Patent No. 5,367,540) and further in view of Matsuyoshi et al. (U.S. Patent No. 6,720,829).

Regarding claim 4, Kondo in view of Kakuishi does not specifically teach “said replica transmit signal is substantially 180 degrees out of phase with said transmit signal”. Matsuyoshi teaches that the replica transmit signal is substantially 180 degrees out of phase with the transmit signal (abstract; col.3, lines 15-30). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo in view of Kakuishi to incorporate the replica transmit signal being substantially 180 degrees out of phase with the transmit signal as taught by Matsuyoshi. The motivation for the modification is to have doing so in order to obtain a maximum suppression.

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7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582) and in view of Kakuishi et al. (U.S. Patent No. 5,367,540) and further in view of Umemoto et al. (U.S. Patent No. 5,379,338).

Regarding claim 5, Kondo in view of Kakuishi does not specifically teach “a digital-to-analog converter (DAC) that receives transmit data and generates said replica transmit signal”. Umemoto teaches a digital-to-analog converter (DAC) that receives transmit data and generates the replica transmit signal (fig.2; col.9, lines 1-20). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo in view of Kakuishi to incorporate a digital-to-analog converter (DAC) that receives transmit data and generates the replica transmit signal as taught by Umemoto. The motivation for the modification is to have doing so in order to convert the data into analog speech signal.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582) and in view of Nakase (U.S. Patent No. 5,231,408).

Regarding claim 13, Kondo does not specifically teach “said high-pass filter has a tunable corner frequency”. Nakase teaches that the high-pass filter has a tunable corner frequency (col.3, lines 13-19). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo to incorporate the high-pass filter having a tunable corner frequency as taught by Nakase. The motivation for the modification is to have doing so in order to obtain a stable tuning characteristic without getting any influence from the AM circuit.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582) and in view of Sawada et al. (Japanese Pub. No. 05-121907).

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Regarding claim 18, Kondo does not specifically teach “said gain stage has a constant input impedance”. Sawada teaches that the gain stage has a constant input impedance (abstract; paragraph 0005, 0007). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo to incorporate the gain stage having a constant input impedance as taught by Sawada. The motivation for the modification is to have doing so in order to obtain an outstanding gain control circuit.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582) and in view of Chan (U.S. Patent No. 6,744,831).

Regarding claim 19, Kondo does not specifically teach “said gain stage is a programmable gain stage”. Chan teaches that the gain stage is a programmable gain stage (col.5, lines 11-20). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo to incorporate the gain stage being a programmable gain stage as taught by Chan. The motivation for the modification is to have doing so in order to provide a preconditioned received analog signal.

11. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582).

Regarding claims 16 and 17, Kondo does not specifically teach a hybrid circuit, a high-pass filter, and a gain stage are differential.

The examiner notes that a differential hybrid circuit, a differential high-pass filter, and a differential gain stage are well known in the art.

It would have been obvious to one skilled in the art at the time of the invention to modify Kondo, such that a hybrid circuit, a high-pass filter, and a gain stage being differential are used

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to provide connections to the different ports of the differential hybrid circuit with a differential high-pass filter, and a differential gain stage as is known in the art.

12. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (U.S. Patent No. 4,246,582) and in view of Chan (U.S. Patent No. 6,744,831).

Regarding claim 24 is rejected for the same reasons as discussed above with respect to claims 1 and 19. Furthermore, Kondo does not specifically teach a differential hybrid circuit, a differential high-pass filter, and a differential gain stage.

The examiner notes that a differential hybrid circuit, a differential high-pass filter, and a differential gain stage are well known in the art.

It would have been obvious to one skilled in the art at the time of the invention to modify Kondo, such that a differential hybrid circuit, a differential high-pass filter, and a differential gain stage are used to provide connections to the different ports of the differential hybrid circuit with a differential high-pass filter, and a differential gain stage as is known in the art.

Regarding claim 25 is rejected for the same reasons as discussed above with respect to claim 22.

***Allowable Subject Matter***

13. Claims 6-12, 14, 15, 20, 21 and 26-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



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***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Md S Elahee whose telephone number is (703)305-4822. The examiner can normally be reached on Mon to Fri from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (703)305-4895. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*M. E.*

MD SHAFIUL ALAM ELAHEE  
September 23, 2004

FAN TSANG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

A handwritten signature in black ink, appearing to read 'Fan Tsang', is written over the printed name and title.